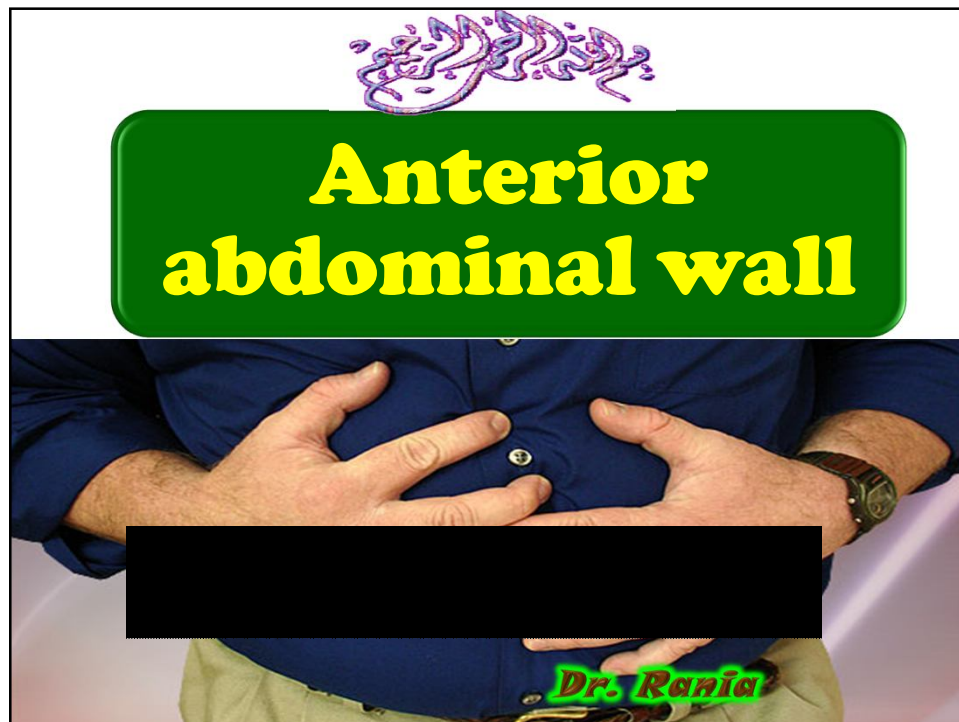
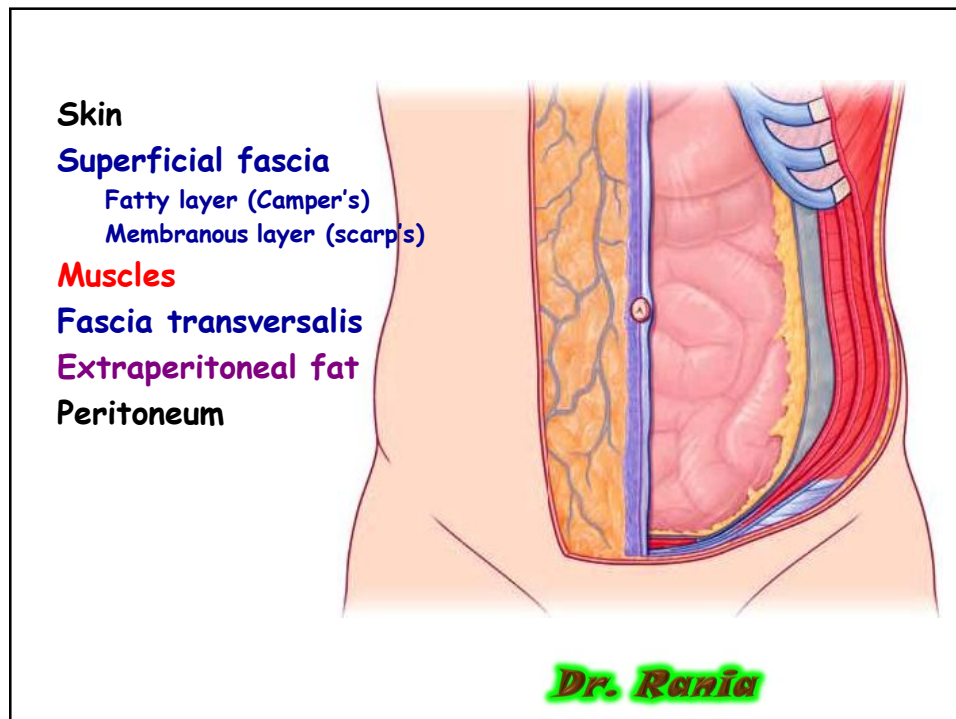




Learning Objectives

- 1- Describe Muscles of anterior abdominal wall
- 2- Describe inguinal canal
- 3- Describe rectus sheath
- 4- Determine clinical correlations of anterior abdominal wall



Muscles

Lateral group	Longitudinal group
External oblique	Rectus abdominis
Internal oblique	Pyramidalis
Transversus abdominis	

Nerve supply: lower 6 intercostal ns& iliohypogastric n

Action: protection, ↑↑intraabdominal pressure, flexion of trunk

External oblique muscle

Origin: lower 8 ribs

Insertion:

1- Outer lip of iliac crest (fleshy)

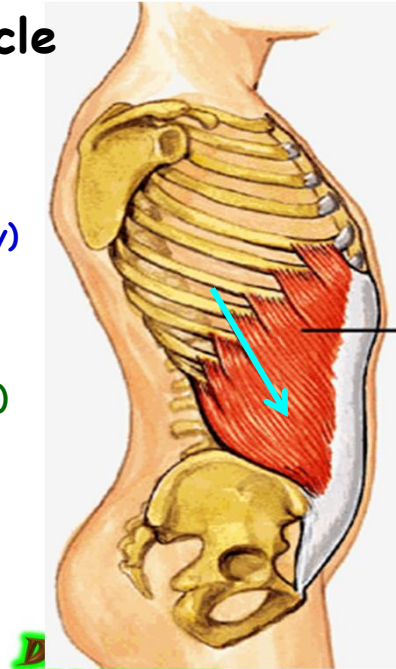
2- Aponeurosis

Linea alba () xiphoid & symphysis pubis

Pubic tubercle, ASIS (inguinal lig)

Direction of fibers:

Downward & forward



Inguinal ligament

Def: lower border of ext. oblique

Attachment:

ASIS, Pubic tubercle

Surfaces:

Upper: concave, Lower: convex

Expansions:

Lacunar ligament, Reflected part

Superficial inguinal ring:

△△ opening in aponeurosis above pubic crest

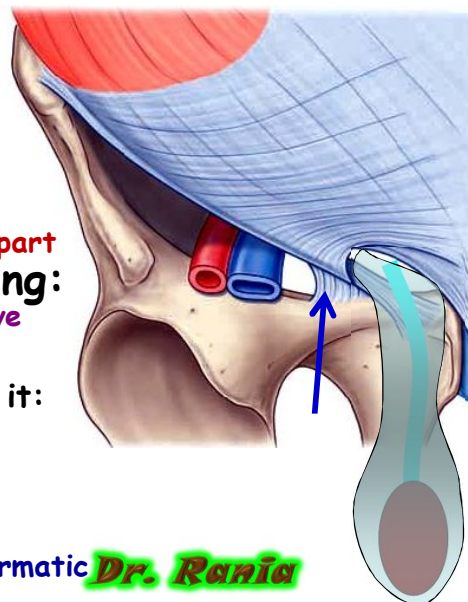
Structures passing through it:

Spermatic cord ♂

Round ligament of uterus ♀

Ilioinguinal n

Has extension called ext. spermatic fascia



Internal oblique muscle

Origin: inguinal lig (lat. 2/3)

Iliac crest

Thoracolumbar fascia

Direction of fibers:

Mid. upward & forward

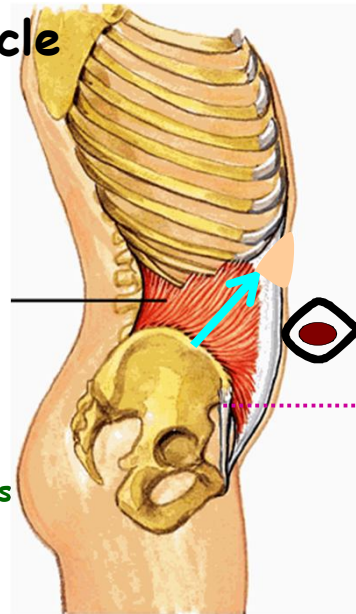
Insertion:

Lower 3 ribs (fleshy)

Aponeurosis

7,8,9 CC & Linea alba

Form Conjoint tendon (pubic crest



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Internal oblique muscle

Cremasteric muscle:

Origin: inguinal lig.

Internal oblique

Insertion: pubic tubercle

NS: genital branch of
genitofemoral n

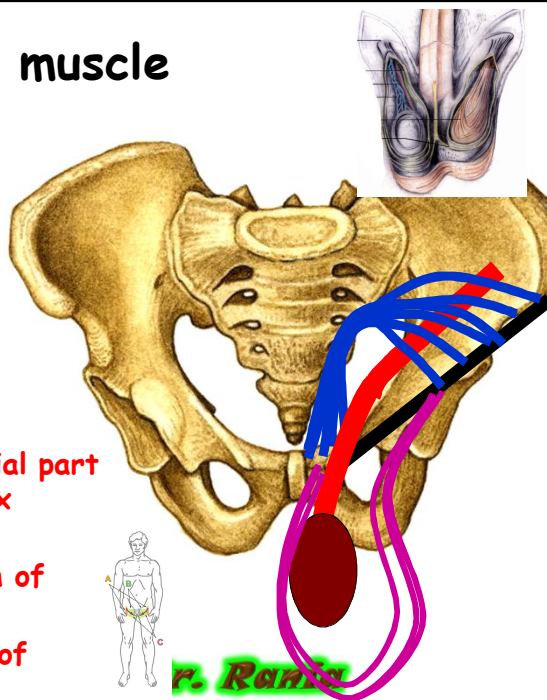
Action: pull testis upward

Cremasteric reflex

Stimulation of upper medial part
of thigh leads to reflex
elevation of testis

Afferent: femoral branch of
genito femoral n

Efferent: genital branch of
genitofemoral nerve



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Transversus abdominis muscle

Origin: inguinal lig (lat. 1/3)

Iliac crest

Thoracolumbar fascia

Lower 6 costal cartilages

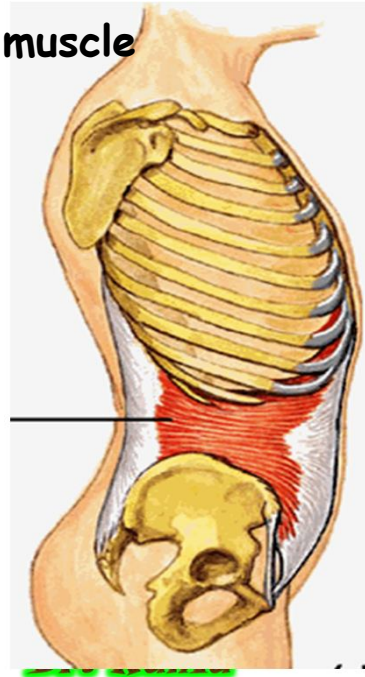
Direction of fibers:

Horizontal

Insertion:

Linea alba

Conjoint tendon



Rectus abdominis muscle

Origin: pubic crest, Symphysis pubis

Insertion:

Xiphoid process

CC 5,6,7

Tendinous intersections:

Pyramidalis muscle

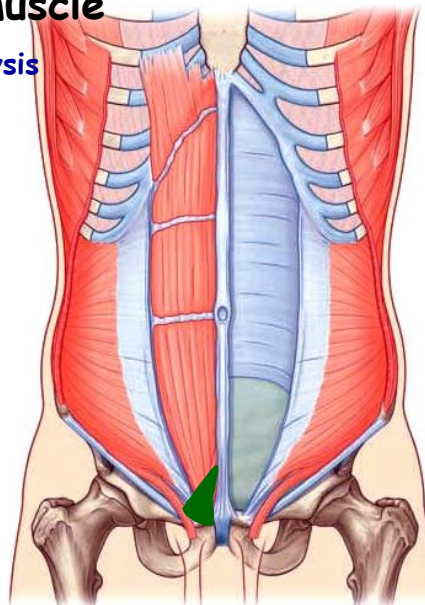
Origin: pubic crest,

Insertion: Linea alba

NS: T12

Action:

Tense linea alba



Fascia transversalis

Def.: lining transversus abdominis

Deep inguinal ring:

Site: 1/2 inch above midpoint of inguinal lig

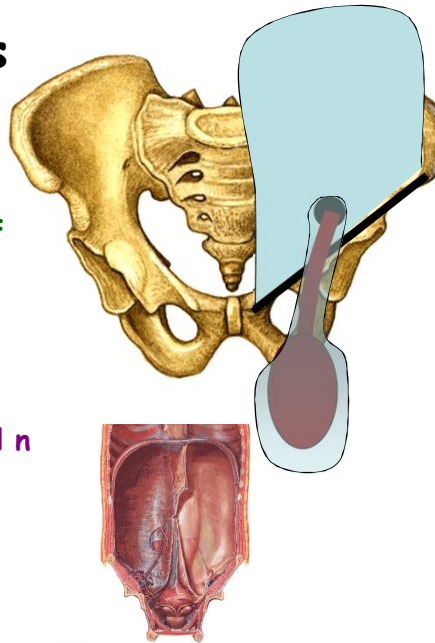
Structures passing through:

Spermatic cord

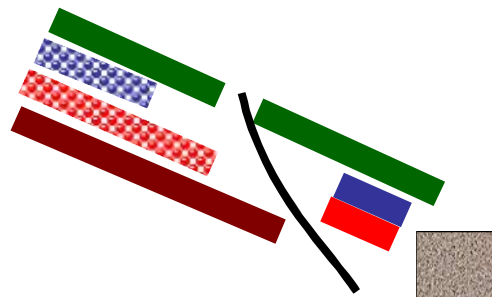
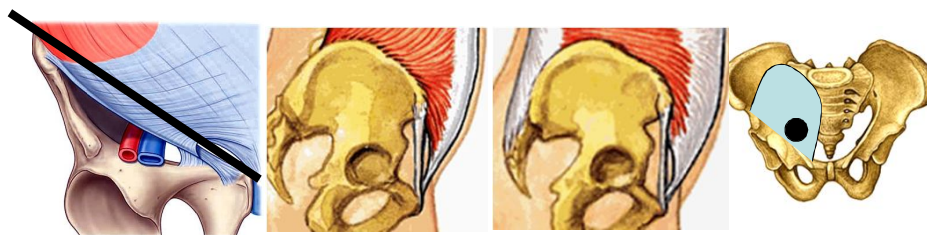
Round ligament of uterus

Genital branch of genitofemoral n

Extends to form Internal spermatic fascia



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Inguinal canal

Def.: oblique passage in abdom. wall

Length: 4cm

Beg.: deep inguinal ring

Term.: superficial inguinal ring

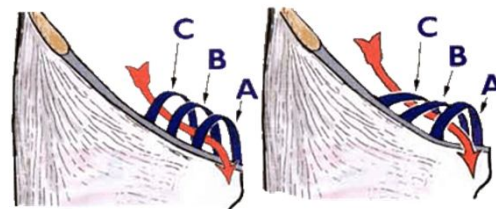
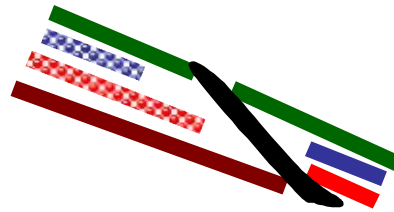
Ant. wall: ext obliq apon, int obliq fleshy fibers

Post. wall: fascia transversalis, conjoint tendon

Floor: inguinal ligament

Roof: internal oblique arch

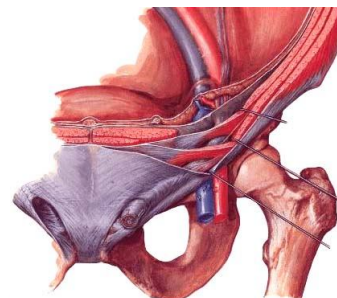
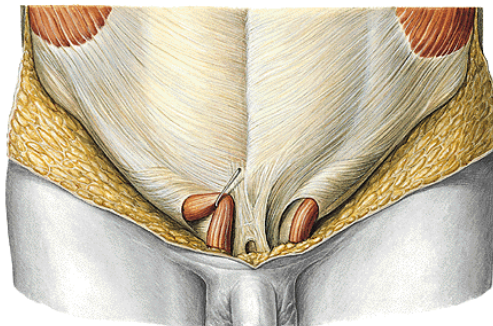
Compensatory mechanisms:



RELAXED

CONTRACTED

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Inguinal canal

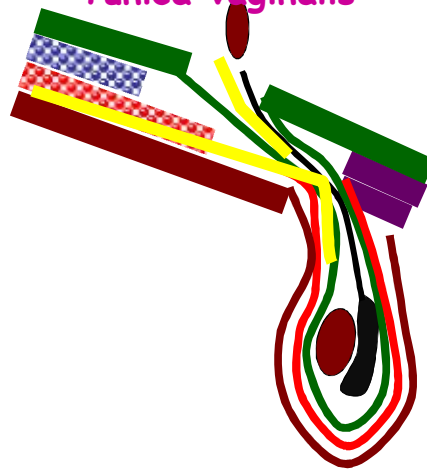
Contents:

Spermatic cord, Round
ligament of uterus
Genital branch of
genitofemoral n,
ilioinguinal n

Processus vaginalis

Vestigial PV

Tunica vaginalis



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Inguinal hernia

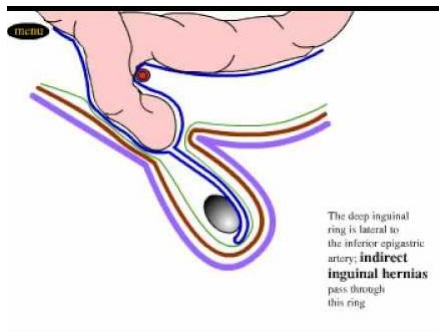
Abnormal protrusion of
peritoneal sac through ant
abdominal wall in groin

Types:

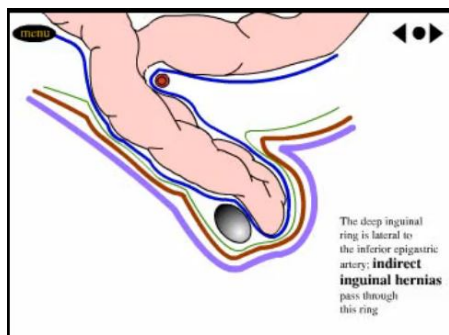
Indirect:

Pass through deep ring into
inguinal canal-to superficial
inguinal ring and might
descends to scrotum

Inferior epigastric artery lies
medial to hernial sac



The deep inguinal
ring is lateral to
the inferior epigastric
artery; indirect
inguinal hernias
pass through
this ring



The deep inguinal
ring is lateral to
the inferior epigastric
artery; indirect
inguinal hernias
pass through
this ring

Inguinal hernia

Direct:

Pass through weak point in
medial part of post wall of
inguinal canal

May pass through superficial ring

Does not descend to scrotum

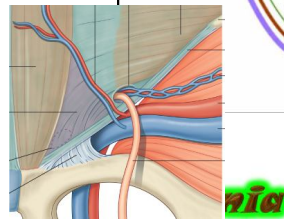
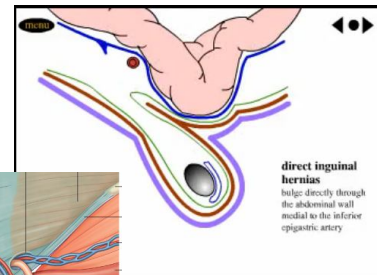
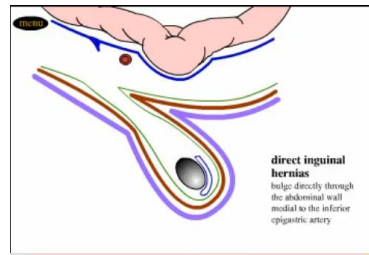
Inferior epigastric artery is
lateral to hernial sac

Usually passes Through
Hasselbach's Δ that is
bounded by:

Lat: inf epigastric artery

Medially: rectus abdominis

Inf: inguinal ligament



Rectus sheath

Def.: envelope for upper 3/4 of
the rectus abdominis

Formation:

Upper part

Ant wall: apn of ext obliq

Ant layer of apn of int oblique

Post wall: post layer of apn of int
oblique

Apon of transversus abdom.

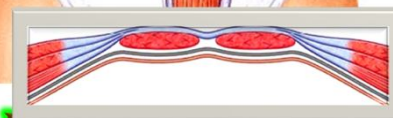
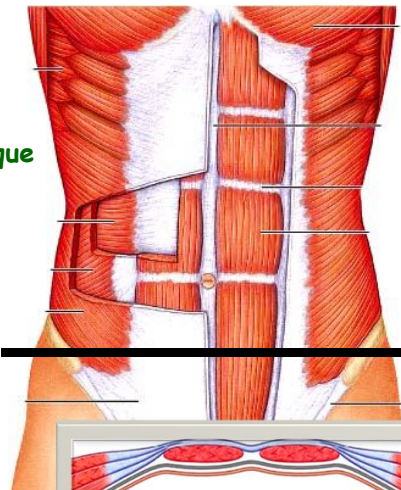
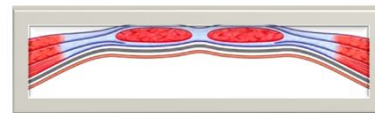
fascia transversalis

Lower $\frac{1}{4}$

Ant wall: apon of 3 muscles

Post wall: fascia transversalis

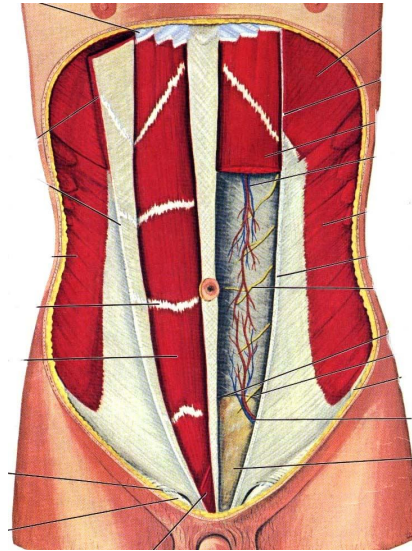
Contents:



Rectus sheath

Contents:

Rectus abdominis ms
 Pyramidalis
 Superior epigastric vess
 Inferior epigastric vess
 Lower intercostal nerves



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Abdominal incisions

Vertical incisions:

Midline incision:

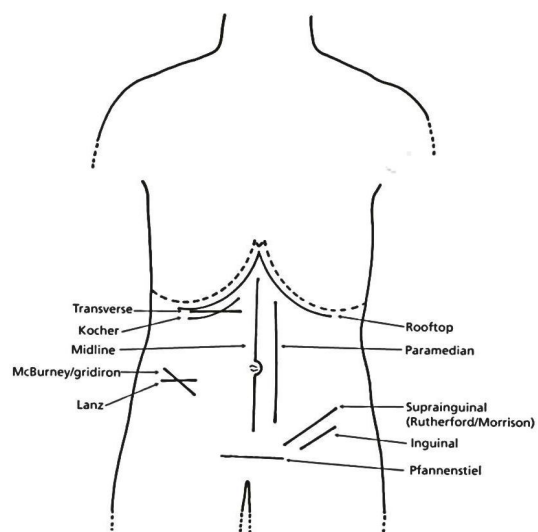
Paramedian incision:

Oblique incisions:

Subcostal (Kocher's) incision: for cholecystectomy

McBurney incision: for appendectomy

Complications: incisional hernia



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